

WEATHER NOTE

PRESSURE RISE AT YAKUTAT, DECEMBER 18, 1959

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Mr. Albert T. Gorman, observer in charge at Yakutat, Alaska, has brought to our attention a phenomenal pressure rise that occurred in a 3-hour period at Yakutat on December 18, 1959. Figure 1 is a reproduction of the station's barograph trace for the period 0800 AST December 17 to 0500 AST December 20, showing the spectacular pressure change.

Mid-December 1959 was a period of marked cyclonic activity in the Gulf of Alaska with a series of closely spaced, moderately intense storms, each having a central pressure of 970 to 980 mb. On the morning of December 17, the storm with which the pressure rise was associated was located 425 nautical miles southeast of stationary weather ship 4YP, and had shown a movement eastward at 20 to 25 knots in the previous 24 hours. At this time it turned northward into the Gulf of Alaska and by late afternoon (Dec. 17) was located 300 miles east of 4YP. By 0200 AST, December 18, the central pressure of the

storm was 974 mb. and it was centered 175 miles west of Annette, Alaska. An associated cold front aloft was on a line north-northeastward to the vicinity of Juneau, while a sharp surface trough with the surface occluded front was on a line from the Low eastward to Annette and moving northward at 35 knots. Following the surface frontal passage, the surface pressure rose 10 mb. in 3 hours at Annette, and 13 mb. at Sitka in a similar period, with a rise of over 5 mb. in 1 hour.

The most astonishing pressure change occurred at Yakutat with a rise from 29.30 in. (983 mb.) at 1155 YST (1055 AST) December 18 to 29.575 in. (1001.5 mb.) at 1455 YST (1355 AST) December 18—a rise of 18.5 mb. in 3 hours and 11.1 mb. in a single hour. This may well be unique as the greatest hourly surface pressure rise associated with an extratropical storm trough on record. We would be interested to hear of any other extratropical surface pressure rises of similar or greater magnitude.

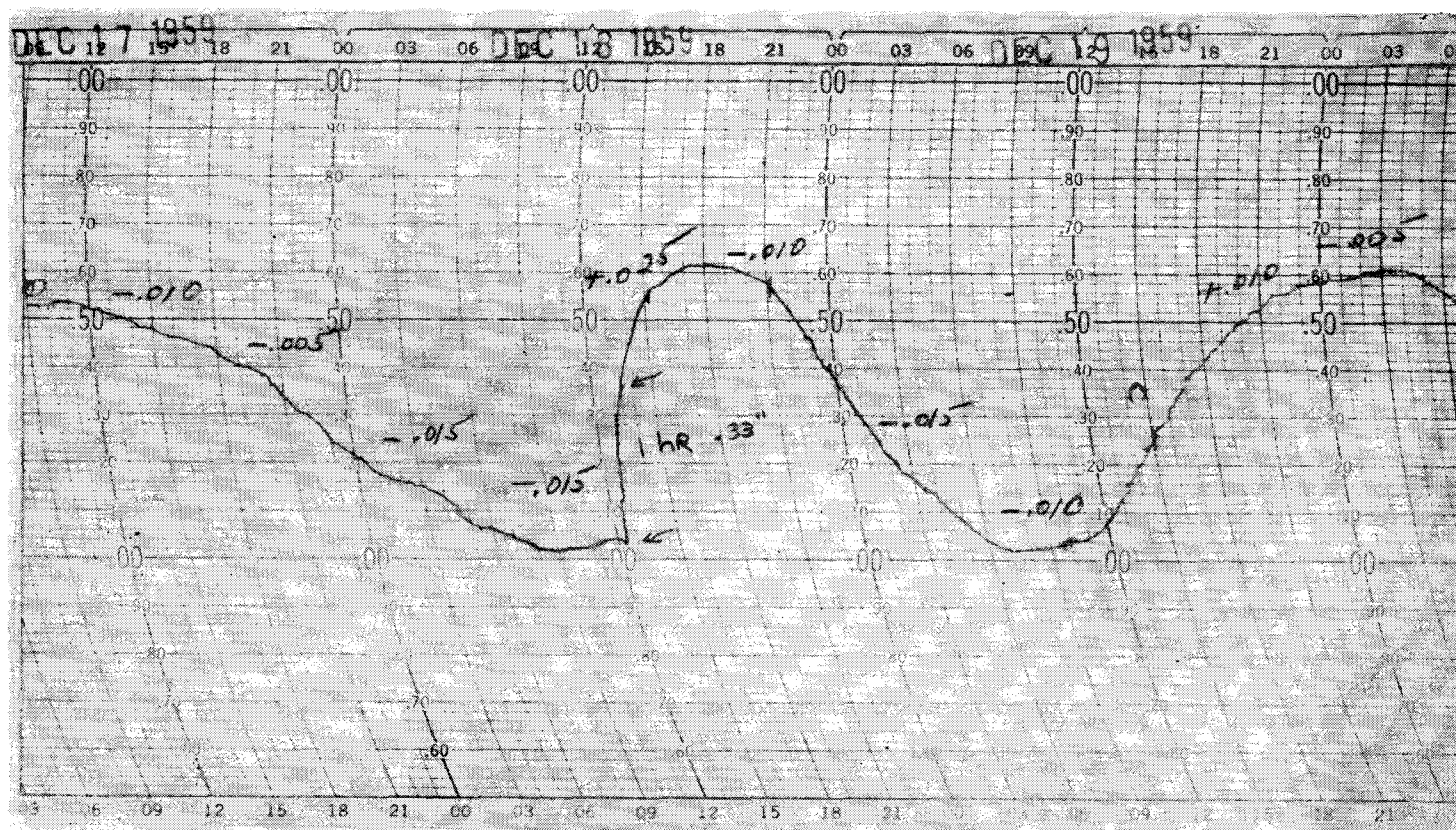


FIGURE 1.—Reproduction of section of barograph trace made at Yakutat, Alaska, 0800 AST December 17, 1959, to 0500 AST December 20, 1959. Note the exceptionally steep rise on the 18th.